ALLIANCE BURDENSHARING:

A REVIEW OF THE DATA

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PREFACE

Is the defense effort of the United States disproportionate to that of its allies, when one takes account of the relative sizes of their populations and economies? The Congress, for some time, has expressed concern that the United States bears an excessive share of the cost of the common defense, especially in Europe. In 1984 the Senate came close to passing an amendment to the defense authorization bill that would have compelled the Secretary of Defense to withdraw troops from Europe if the other members of the North Atlantic Treaty Organization (NATO) did not meet certain quantitative targets for increasing their defense efforts. This year, again, the suggestion has been made that the United States should withdraw some forces from Europe and force its allies to assume a greater share of the burden of defending themselves.

The Congressional Budget Office (CBO) has been requested by the Subcommittee on Conventional Forces and Alliance Defense of the Committee on Armed Services, U.S. Senate, to review the Department of Defense's Report on Allied Contributions to the Common Defense. That annual report assesses a variety of quantitative measures bearing on the relative defense efforts of the NATO allies and Japan. It also examines other factors relating to this issue. CBO previously reviewed the Defense Department's 1984 report and was critical in certain respects of its analysis and conclusions (see "Burdensharing in the North Atlantic Alliance," Staff Working Paper, February 1985). One reason for this new review is to determine whether those concerns are still valid.

R. William Thomas of CBO's National Security Division prepared this analysis under the supervision of Robert F. Hale and John D. Mayer, Jr. Elizabeth Sterman of the National Security Division and Stephan Thurman of the Fiscal Analysis Division assisted in the analysis. The paper was edited by Francis Pierce.

Edward M. Gramlich
Acting Director

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INTRODUCTION AND SUMMARY

Under Congressional mandate, the Department of Defense (DoD) issues an annual report on the contributions made by the United States and its allies to the common defense. In its 1987 report, the seventh so far, DoD concludes that "the United States by certain measures is doing more than almost all its partners." 1/ But DoD also emphasizes that the allied contribution is substantial, and that "for some important quantitative defense measures, our NATO allies and Japan compare well with the United States." 2/ The report goes on to note that "important differences emerge . . . when the results for individual countries are compared. Some nations appear to be doing their fair share; other nations appear, on the whole, to be making financial contributions below their fair share." 3/ Finally, the report discusses important qualitative contributions made by the allies that are not captured in its quantitative assessment.

The ultimate judgment as to whether the U.S. military burden is excessive is a political one, and cannot be based simply on comparing quantitative indicators of one or another country's defense efforts. The Congressional Budget Office (CBO) review does not attempt to judge the fairness of the U.S. or the allied defense burdens. Rather, it examines the data and analysis presented in DoD's report and reaches the following conclusions:

- Overall, the DoD report presents a wide variety of data to measure burdensharing, and draws reasonable and fair conclusions as to the performance of individual countries.

- DoD concludes that measures of military forces present a more favorable picture of the other countries' relative contribution than do economic measures (such as shares of GDP spent on defense). But the report's military measures exclude strategic forces, naval aviation squadrons, and mobility forces, in which the United States dominates; also (with one exception) they do

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1. Secretary of Defense Caspar W. Weinberger, Report on Allied Contributions to the Common Defense (March 1987), p. i.

2. Ibid., p. 4.

3. Ibid., p. 4.

not capture important differences in the quality of equipment where, as DoD notes, the United States is generally superior.

- CBO supports DoD's finding that the United States is currently bearing a higher economic burden than its allies. DoD qualified that finding by noting the allies bear certain costs that are not included in the quantitative measures. When CBO estimated some of these costs for Germany, however, the results did not materially affect the U.S.-German comparison.

- Measured relative to its share of GDP, the U.S. burden grew moderately between 1980 and 1985. The United States has always borne more than its share of defense costs, but to a degree varying with the ebb and flow of U.S. defense spending. The allies, by contrast, have been more constant in their expenditures on defense.

- The Congress directed DoD to include an analysis of Japanese defense contributions in its report but did not specify how to do this. Since Japan does not belong to NATO, and has a high GDP but low defense spending, the inclusion of Japanese data tends to distort the measure of burdensharing in NATO, though not enough to alter the fundamental conclusions of the DoD report.

SECTION I. MEASURES OF BURDEN IN THE DoD REPORT

The 1987 report uses both economic data and indicators of military capability to measure burden. It contains data only through calendar year 1985 because of the lag in reporting and compiling allied data. Thus, while this analysis refers to the "1987 report," it generally considers data only through 1985.

ECONOMIC MEASURES 1/

The simplest and most commonly accepted measure of the defense burden--namely, the percentage of each nation's gross domestic product (GDP) that it spends for defense—indicates that the United States bears a higher burden than most of its allies. In 1985, the United States spent 6.7 percent of its GDP on defense, nearly twice the percentage spent by its NATO allies and more than six times what Japan spent (see Table 1). Only Greece's burden, at 7.1 percent, exceeded the U.S. figure.

Defense Spending Shares

The DoD report also compares each nation's share of total defense spending with its share of total GDP (that is, the sum of all nations' GDP valued in U.S. dollars). In 1985, the United States commanded 48 percent of the sum of NATO's and Japan's GDP (expressed in U.S. dollars), but U.S. defense spending constituted 70 percent of the NATO and Japan total (see Table 2). Clearly, by this measure, the United States spends far more on defense than its share of GDP would suggest. The ratio of the U.S. share of defense spending to its share of GDP was 1.47 in 1985, which can be interpreted to mean that the United States spends 47 percent more of its resources on defense than the average for all nations included in the study. The NATO allies' defense spending amounted to 27 percent of the 1985 total, compared with their 36 percent share of total GDP, meaning that they spent only 74 percent of the norm. Japan, with 17 percent of total GDP, contributed only 4 percent of defense spending, a level of effort 79 percent below this norm.

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1. These measures have little to do with the formal burdensharing arrangements negotiated to pay the costs of the NATO organization and programs. These are summarized in Appendix A.

Per Capita Burdens

Per capita measures do not change these conclusions. The individual U.S. taxpayer pays more than twice as much for defense as the citizen of any of the other allies. U.S. defense spending in 1985 was $1,091 per capita, while the next highest burden ($433) fell on citizens of Norway (see Table 3). Turkey, which spent only $48 per capita, ranked last. DoD points out that this measure is difficult to interpret and subject to misunderstanding. Nations with large populations and limited economic resources, such as Turkey, may spend a large share of their income on defense and still rank at the bottom in per capita terms.

Among the richer allied nations, Canada, France, Germany, Norway, and the United Kingdom spent from $301 to $433 per capita, while Belgium, Denmark, Italy, and the Netherlands formed a second group with per capita spending of $170 to $268. Japan's and Luxembourg's per capita figures were just over $100.

TABLE 1. PERCENTAGE OF GDP SPENT FOR DEFENSE IN 1985

Belgium	3.0
Canada	2.2
Denmark	2.2
France	4.1
Germany	3.2
Greece	7.1
Italy	2.7
Luxembourg	1.1
Netherlands	3.1
Norway	3.3
Portugal	3.1
Spain	2.7
Turkey	4.5
United Kingdom	5.3
Non-U.S. NATO Average	3.5
United States	6.7
NATO Average	5.4

SOURCE: NATO Review, vol. 35, no. 1, p. 33. Spanish data estimated by the Congressional Budget Office.

TABLE 2. DoD'S SUMMARY MEASURES OF ABILITY TO CONTRIBUTE AND OF CONTRIBUTION

Indicators of Ability to Contribute

	GDP Share (percent of total)	Population Share (percent of total)	Per Capita GDP (percent of U.S. level)
United States	48	32	100
Non-U.S. NATO	36	53	45
Japan	17	16	70

Indicators of Contribution (Percent of total)

	Defense Spending Share	Total Defense Manpower Share	Ground Forces Share	Tactical Air Forces Share	Naval Tonnage Share
United States	70	38	39	45	64
Non-U.S. NATO	27	59	57	51	33
Japan	4	2	4	4	3

Ratios of Contribution to Ability to Contribute

	Defense Spending Share/ GDP Share	Defense Manpower Share/ Population Share	Ground Forces Share/ GDP Share	Tactical Air Forces Share/ GDP Share	Naval Tonnage Share/ GDP Share
United States	1.47	1.22	0.82	0.96	1.35
Non-U.S. NATO	0.74	1.13	1.61	1.42	0.92
Japan	0.21	0.14	0.22	0.23	0.19

SOURCE: Adapted by the Congressional Budget Office from Secretary of Defense Caspar W. Weinberger, Report on Allied Contributions to the Common Defense (March 1987).

TABLE 3. DEFENSE SPENDING AND GDP PER CAPITA
(Data for 1985 in U.S. dollars)

	Per Capita Defense Expenditures	Percent of U.S.	Per Capita Gross Domestic Product	Percent of U.S.
Belgium	242	22	8,159	49
Canada	301	28	13,691	82
Denmark	246	23	11,179	67
France	378	35	9,307	56
Germany	326	30	10,189	61
Greece	235	22	3,298	20
Italy	170	16	6,574	39
Japan	110	10	11,063	66
Luxembourg	106	10	11,899	71
Netherlands	268	25	8,581	51
Norway	433	40	13,954	84
Portugal	64	6	1,840	11
Spain	124	11	4,529	27
Turkey	48	4	983	6
United Kingdom	421	39	8,005	48
United States	1,091	100	16,679	100

SOURCES: NATO Press Service, "Financial and Economic Data Relating to NATO Defence," Press Release M-DPC-2(86)39, Brussels (December 4, 1986) for NATO defense expenditures a/; International Monetary Fund, International Financial Statistics Yearbook (August, 1986) for gross domestic product and population.

a. U.S. data in the NATO press release were incorrect. Correct data were supplied by the Department of Defense.

Clearly, based on these three economic indicators, DoD is correct in concluding that the United States is providing more than its share of the common defense. 2/

2. In its 1986 and earlier reports, DoD presented an alternative approach to measuring the defense burden. Arguing that richer nations are able (Continued)

MILITARY MEASURES OF BURDEN

While the economic measure of burden suggests that the United States spends more than its share on defense, the DoD report indicates that some measures of military forces present a different picture. One such measure is military-related personnel compared with total population. The NATO allies' share of total defense personnel (including reserve forces and civilian employees of the defense establishment) was 59 percent in 1985, as compared with their 53 percent share of total population (see Table 2). The United States, with 32 percent of the total population, provided 38 percent of total defense personnel. By this measure, the U.S. contribution and that of the NATO allies seem of similar proportion. Japan, with 16 percent of the population total but only 2 percent of the military personnel, was again far below the NATO average.

Separate comparisons were also made for air, land, and sea forces. Land forces are measured in division equivalent firepower (DEF)--a measure that takes into account the size of military divisions and also adjusts for differences in the size, equipment, and firepower of different armies' units. This is probably the best practical approach to comparing disparate forces. Based on this measure, the NATO allies' land forces exceeded their GDP share by fully 61 percent, while U.S. land forces were 18 percent less than their GDP share--a comparison highly favorable to the allies. Again, Japan's land forces share was 78 percent below its GDP share.

A comparison of tactical aircraft leads to findings similar to those for ground forces, though not quite as favorable to the allies. The NATO allies' tactical air forces comprised 51 percent of the NATO and Japan total, as compared to their 36 percent share of GDP, a ratio of 1.42. U.S. tactical

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(Footnote Continued)

to afford relatively larger outlays for defense, DoD constructed an alternative measure of ability to pay--termed the prosperity index--that adjusted each nation's total GDP according to its relative prosperity (as measured by per capita GDP). Using this approach to measure "fair" shares, the expected U.S. contribution would have increased from 48 percent to 61 percent in 1984 because of its high per capita GDP, while the norm for the NATO allies would have declined to 26 percent--equal to their defense spending share--because countries such as Greece, Portugal, and Turkey have per capita incomes less than one-fourth that of the United States. Thus, measured by the prosperity index, the NATO allies could be considered to be paying their fair share. The 1987 report makes no mention of the prosperity index.

aircraft were 45 percent of the total, as against 48 percent of GDP, while Japan provided 4 percent of the aircraft compared with 17 percent of GDP.

In naval forces, however, the story is different. Measured in total tonnage of surface combatants and attack submarines, the U.S. Navy represents 64 percent of the NATO and Japan total. The NATO allies' navies collectively make up only 33 percent, and Japanese naval forces comprise the remaining 3 percent.

The DoD report uses these various military measures to emphasize the importance of allied contributions to NATO defense, and the value of the alliance to the United States. Indeed, though not mentioned in the report, a comparison of the U.S.-Soviet military balance with the NATO-Warsaw Pact balance makes clear that the United States draws much more support from its allies than the Soviet Union does from its Warsaw Pact partners. 3/

QUALITATIVE FACTORS AND OMITTED COSTS

The DoD also notes that certain costs associated with the defense effort of the allies are not included in the NATO definition of defense spending, which is used throughout the report. These include the value of real estate provided free of charge for the stationing of foreign forces; the economic burden imposed by conscription on the population; and other contributions (chiefly by the government of the Federal Republic of Germany) to further political purposes related to the maintenance of stability in Europe, such as economic support for West Berlin. Other considerations--such as the fact that Europe is the likely setting for any future world conflict--are noted but defy quantification.

Finally, the 1987 report emphasized political actions that should be considered. For example, it noted such actions as expansion of the NATO Infrastructure Program, which pays for military construction and other projects in Europe of use to NATO forces. The report also notes the allies' efforts to build up stocks of munitions that would be necessary to sustain a prolonged combat, and their participation in the Conventional Defense Initiative--an effort to strengthen conventional forces and lessen dependence on nuclear retaliation.

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3. For data on NATO-Warsaw Pact military force comparisons, see John M. Collins, U.S./Soviet Military Balance (Congressional Research Service, Library of Congress, 1985), chap. 13.

SECTION II. CRITIQUE OF THE BURDENSHARING RESULTS

Overall, the DoD report provides a reasonably fair, correct presentation of the major factors bearing on burdensharing. The reader of the report, however, needs to keep in mind certain considerations that affect the results.

SENSITIVITY OF BURDENSHARING RESULTS TO EXCHANGE RATES

Defense spending shares are very sensitive to exchange rate fluctuations. To express each nation's defense spending as a share of the NATO and Japan total, it is necessary to convert each nation's defense spending into a common currency. This is done using the average foreign exchange rate against the U.S. dollar for the year.

In 1985 the dollar was high in value relative to other currencies. This raised the U.S. defense spending share and lowered the defense shares of the NATO allies. Since 1985, the value of the dollar has declined considerably. Using current exchange rates, instead of 1985 rates, to convert 1985 defense spending into dollars lowers U.S. defense spending from 70 percent of the NATO and Japan total to 62 percent, while the NATO allies' share increases from 27 percent to 33 percent (see Table 4). 1/

There is no firm basis for choosing one set of exchange rates over another. A more objective measure of international values is purchasing power parity--the relative cost of a standard market basket of goods in different currencies. CBO used purchasing power parities as measured by the Organization for Economic Cooperation and Development (OECD) to recompute defense shares for 1985. Based on these data, the 1985 U.S. defense share was only 57 percent of the total as against 70 percent based on 1985 exchange rates (see Table 4).

The same considerations also apply to comparing GDP shares. The effect of movements in exchange rates on the defense spending share/GDP share ratios is quite difficult to anticipate. Substituting 1987 exchange rates for 1985 rates raised the ratios for the United States, the non-U.S. NATO countries, and Japan simultaneously, as shown in the bottom panel of

1. Exchange rates prevailing on April 30, 1987, as reported in the Wall Street Journal, were used in this exercise.

TABLE 4. SENSITIVITY OF BURDENSHARING MEASURES TO EXCHANGE RATES (Data for 1985)

	Converted at 1985 Exchange Rates	Converted at 1987 Exchange Rates a/	Converted at OECD Purchasing Power Parities
Defense Spending Shares (In percent of total)			
United States	70.2	62.0	57.0
Non-U.S. NATO b/	26.2	32.6	39.6
Japan	3.6	5.4	3.4
Gross Domestic Product (GDP) Shares (In percent of total)			
United States	49.3	39.2	38.5
Non-U.S. NATO b/	34.1	38.4	46.2
Japan	16.6	22.4	15.3
Ratio of Defense Spending Share to GDP Share			
United States	1.42	1.58	1.48
Non-U.S. NATO b/	.77	.85	.86
Japan	.22	.24	.22

SOURCES: Congressional Budget Office based on data from the following: NATO Review, vol. 35, no. 1, p. 33, for defense spending; International Monetary Fund, International Financial Statistics Yearbook (August 1986) for GDP and exchange rates.

a. Rates for April 30, 1987, as reported in the Wall Street Journal.

b. Excludes Spain.

Table 4, but did not alter the basic findings. Thus, while defense shares are sensitive to exchange rates, ratio measures continue to confirm the excess U.S. burden under a variety of valuation methods.

LIMITATIONS OF MILITARY MEASURES

The military measures in the DoD report tend to present a more favorable view of the allies' efforts than do the economic measures. This is mainly because the military data measure only selected conventional forces, while the defense spending measure covers all defense costs, including those for strategic and mobility forces, on which the United States spends far more than its allies.

The measure that makes the allies, as a whole, look strongest is land forces, as measured by division equivalent firepower. While certainly superior to simple counts of divisions, the division equivalent measure does not take into account other important aspects of military capability such as training, readiness, and ability to sustain forces in a long war. If these factors, particularly sustainability, could be included, the U.S. land forces might rank higher. For example, while all the NATO countries have deficiencies in stocks of munitions needed to sustain forces in wartime, the United States is generally conceded to be better supplied than the others. In addition, the United States can move forces more quickly over long distances with its strategic airlift assets, which are not mentioned in the report.

The measure of tactical air forces used in the report has certain limitations. The DoD reported that U.S. tactical combat aircraft contributed 45 percent of the NATO and Japan total, while the NATO allies provided 51 percent. But the data presented in the report include only tactical aircraft in each country's air force. No data are presented on tactical fighter or attack aircraft in naval aviation squadrons. If those were included, the U.S. share of all tactical combat aircraft would rise to 60 percent, while the allies' share would decline to 36 percent—comparable to their economic share.

The air force measure may overstate allied strength in another way. DoD's counts of combat aircraft include "combat-capable" trainers. U.S. trainer aircraft tend to be specialized and not combat-capable, but many allies use older fighter aircraft as trainers. This factor makes the allied combat aircraft counts somewhat larger than those given in open-source compilations of tactical combat aircraft strength (such as the International Institute for Strategic Studies' annual compendium, The Military Balance).

As the DoD report correctly notes, there are also important qualitative differences among allied air forces. Forty-five percent of U.S. aircraft were classed as new-generation forces, while only 25 percent of the allies' aircraft were in that category.

Finally, no comparisons were made of strategic or theater nuclear forces in the report, even though these forces play a key role in NATO defenses. On the basis of deliverable warheads, the U.S. strategic systems represent more than 95 percent of the NATO total. British and French strategic nuclear assets constitute the remaining 4 percent to 5 percent. The United States also paid for the theater nuclear forces--Pershing II missiles and ground-launched cruise missiles--recently deployed in Europe.

OMITTED COSTS

The DoD noted that, under the NATO definition of defense expenditures, certain costs borne by some European allies but not by the United States--such as land and facilities occupied by foreign forces, and the burden of conscription--are not included. Estimates by CBO and others suggest, however, that--where these costs can be roughly quantified--they would not alter the basic findings. It should be noted that CBO has not costed all the factors that DoD cites, but only three important ones.

The country bearing the highest burden of these excluded costs is probably West Germany. Its defense spending in 1985 was 58.6 billion marks (19.9 billion U.S. dollars). This amount represented 3.2 percent of the West German gross domestic product (GDP). Germany drafts its junior enlisted forces. If it were to shift to an all-volunteer force, it would incur an additional expense estimated at $1.8 billion for higher pay and benefits. 2/ This increase would raise its total defense contribution to 3.5 percent of its GDP. A second, unrecorded cost is the value of German real estate occupied by foreign military facilities, estimated by the Ministry of Defense at over $18 billion. Assuming a rental-to-value ratio of 7 percent, this would add $1.3 billion to annual spending. In addition, of the $6 billion that the West German government spends to support West Berlin, about $0.5 billion a year is for the support of the allied garrisons there.

Added to official defense expenditures, these contributions would raise the West German defense effort to 3.8 percent of its GDP. Even so, the West German share would still be well below the U.S. percentage of 6.7.

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2. Estimate by the Department of Defense in Report on Allied Contributions to the Common Defense (March 1987), p. 150.

Although CBO did not have the data to perform this calculation for all NATO countries or all omitted costs, the fact that most foreign forces in Europe are based in Germany suggests that these factors would weigh more heavily on it than any of the other allied countries. Thus, the qualitative factors discussed by DoD--at least those that can be quantified--do not appear of sufficient magnitude to reverse the conclusion that the United States contributes more to NATO--as a share of its resources--than do its allies. Some factors, however, such as the risk that Europe will be the principal battlefield in a future conflict, defy quantification.

U.S. SPENDING FOR NON-EUROPEAN CONTINGENCIES

The United States devotes a substantial amount of its defense spending to capabilities that are not directly for the defense of Europe. These include its strategic nuclear forces and those forces stationed in or allocated to the Pacific and Southwest Asia theaters. There is no precise way to measure the proportion of the U.S. defense budget spent on NATO, but estimates by the Department of Defense suggest that close to 60 percent of its budget is spent for forces directly committed to NATO. 3/ Eliminating non-NATO spending from the U.S. and NATO totals, and similarly eliminating out-of-area spending by the allies, would alter the conclusions substantially, suggesting that the allies pay more than their share of direct NATO costs.

But there are good arguments against eliminating non-NATO spending. Indeed, the Department of Defense always uses total U.S. defense spending in its assessment of burdensharing. This procedure may be reasonable since U.S. forces not directly committed to NATO play an important part in the overall defense. Strategic nuclear forces, for example, play a key role in deterring an attack on NATO. Forces stationed in or designated for areas other than Europe and the North Atlantic protect vital NATO interests, such as oil supplies in the Persian Gulf, and the existence of these forces could require that potential adversaries devote some of their defense budget to non-NATO theaters rather than focusing solely on the North Atlantic and European theaters.

EFFECT OF JAPANESE DATA ON ECONOMIC MEASURES

Japan is included in the DoD report by direction of the Congress. Counting the Japanese data in the overall totals distorts NATO burdensharing com-

3. Department of Defense, United States Expenditures in Support of NATO (April 1986), p. 11.

parisons, though not enough to change the basic pattern. Japan, of course, is not a member of NATO. DoD includes Japanese data in all its results, though the presentation of data allows the reader to make calculations excluding Japan.

Japan has the second largest economy of the countries covered in the report, but spends relatively little (1 percent of its GDP) on defense. Including Japan in the economic comparisons increases total GDP by 19 percent but increases total defense spending by only 4 percent, thus making the other nations' relative defense contributions appear higher. Calculating the defense share/GDP share ratio without Japan emphasizes the difference (see Table 5). Using the report's method, which includes Japan, the non-U.S. NATO allies' collective defense spending share is 74 percent of their GDP share. With Japan excluded, the non-U.S. NATO allies' defense spending amounts to about 67 percent of their "fair share," based on their GDP.

TABLE 5. EFFECT OF REMOVING JAPAN FROM THE CALCULATION OF SHARES (Using 1985 data)

	DoD Calculation Including Japan			CBO Calculation Excluding Japan	
	United States	Non-U.S. NATO	Japan	United States	Non-U.S. NATO
Defense Spending Share/GDP Share	1.47	0.74	0.21	1.23	0.67

SOURCE: Congressional Budget Office.

SECTION III. TRENDS IN BURDENSHARING

If Japan is included in the totals, the United States has borne an increasing share of the NATO defense burden since 1980. Comparisons over time are complicated by changes in rates of inflation and exchange rates. While the economic measure of the U.S. defense burden--defense spending relative to GDP--has declined from its levels in the 1950s and 1960, the same is true for most of the allies. Using the ratio of defense spending share to GDP share, the U.S. burden has risen from 1.24 in 1955 to 1.42 in 1985. But this primarily reflects the growing economic weight of Japan. Recalculating the NATO shares without Japan results in a relatively stable pattern (see Table 6).

The major NATO allies tend to maintain greater constancy in the share of their GDP they spend on defense than does the United States. Since 1975, for example, West Germany's defense expenditures varied within the narrow range of 3.2 percent to 3.4 percent of its GDP. France (spending about 4 percent of its GDP) and the United Kingdom (which spends around 5 percent) also displayed relatively stable defense efforts, relative to their economic resources. Meanwhile, U.S. defense spending, which was 5.9 percent of GDP in 1975, dipped to a low of around 5 percent in the next three years, then rose to 6.7 percent by 1985. Thus, variations over time in the burdensharing ratios of the United States and its allies (as shown in Table 6) are due primarily to rising and falling U.S. defense expenditures, and less so to variations in the allies' defense efforts.

FAILURE TO MEET THE THREE PERCENT GOAL

Another way to assess trends in burdensharing is to measure compliance with spending commitments. In 1977, the allies signed the NATO Long Term Defense Plan which, among other things, committed each NATO country to try to increase its defense spending, after adjustment for inflation, by 3 percent annually.

Table 7 shows the results achieved through 1985--the last year of data in the 1987 report. Only one country has met the goal every year—the United States. On average, the NATO allies increased their real defense spending by 2.0 percent per year from 1978 to 1985, while U.S. defense spending rose by 5.7 percent per year.

CBO estimates that in 1986 seven NATO countries, including the United States, met the 3 percent real growth commitment in expenditures or outlays (interpreted by NATO as a real increase of 2.8 percent or more). However, none of the four largest European allies--France, Germany, Italy, or the United Kingdom--did so. In 1987, the United States will experience a real decline in outlays because of recent budget cuts. At the end of this year, then, no NATO country will have met the 3 percent goal in every year, though average U.S. increases through 1987 will still exceed 3 percent.

TABLE 6. HISTORICAL TRENDS IN BURDENSHARING
(In constant 1985 dollars and 1985 exchange rates)

	1955	1960	1965	1970	1975	1980	1985
Defense Share/GDP Share (Including Japan) a/							
United States	1.24	1.30	1.30	1.46	1.36	1.32	1.42
Non-U.S. NATO	0.71	0.70	0.77	0.66	0.84	0.88	0.77
Japan	0.12	0.15	0.16	0.14	0.21	0.24	0.22
Defense Share/GDP Share (Excluding Japan)							
United States	1.18	1.22	1.19	1.29	1.20	1.16	1.23
Non-U.S. NATO	0.67	0.66	0.71	0.58	0.74	0.78	0.67

SOURCE: Congressional Budget Office.

a. Computed using fiscal year defense expenditures and calendar year GDP and excluding Spain. Therefore, the 1985 values differ from those reported by DoD.

TABLE 7. REAL INCREASE IN DEFENSE SPENDING (Percent change from previous year after adjusting for inflation)

	1979	1980	1981	1982	1983	1984	1985	Annual Average 1979-1985	Forecast 1986
Belgium	2.2	1.9	0.9	-0.1	-0.4	-1.3	-1.7	0.2	2.0
Canada	-0.9	5.1	3.1	4.5	8.0	7.2	2.4	4.2	3.7
Denmark	0.2	0.7	0.6	-0.3	0.8	-1.1	0.9	0.3	2.8
France	2.5	3.7	3.9	1.3	1.8	-0.2	-0.2	1.8	0.7
Germany	1.8	2.3	3.2	-0.7	0.8	-0.4	0.3	1.0	0.1
Greece	-2.9	-9.4	22.8	-1.1	-7.9	17.1	0.7	2.1	-5.2
Italy	2.6	4.9	-0.5	3.1	2.5	2.8	3.0	2.6	1.8
Japan	n.a.	n.a.	4.8	5.9	5.6	5.3	5.3	5.4	1.9
Luxembourg	3.5	16.3	4.3	0.2	3.4	0.5	-1.5	3.7	9.5
Netherlands	4.2	-2.1	4.2	2.2	0.5	3.2	0.2	1.7	3.4
Norway	1.9	1.8	2.7	4.1	4.0	-4.6	15.2	3.4	-4.9
Portugal	2.9	6.0	1.2	0.6	-3.1	-4.6	-0.3	0.3	5.2
Spain	n.a.	n.a.	1.8	3.5	2.1	2.6	2.5	2.5	3.0
Turkey	2.6	2.0	1.8	4.6	-4.4	-1.3	8.5	1.9	13.0
United Kingdom	3.0	2.8	1.4	6.0	0.4	4.0	-0.2	2.5	0.2
United States	3.4	4.9	4.6	7.0	7.9	4.7	7.8	5.7	6.5
Non-U.S. NATO Average	2.2	2.6	2.8	2.5	1.3	2.0	1.0	2.0	0.9
Total NATO	3.1	4.0	4.0	5.5	5.8	3.9	5.8	4.6	5.0

SOURCES: 1979-1985 data: Secretary of Defense Casper W. Weinberger, Report on Allied Contributions to The Common Defense (various years).

1986 forecasts: Based on NATO forecasts for defense spending and CBO projections of inflation in each country. The projections were based on incomplete data for overall price increases in 1986 and do not reflect defense-specific prices.

n.a. = not available.

APPENDIX. FORMAL BURDENSHARING ARRANGEMENTS

When NATO formally allocates burdens among its members, U.S. allies tend to assume a higher share of these explicit costs than they do of total NATO defense costs. The NATO organization is funded through two budgets: the civil budget (to which all members contribute) and the military budget (including only those countries participating in the common NATO military command structure, excluding France and Spain). 1/ In addition, NATO operates a number of special projects--the NATO Airborne Early Warning and Control System (NAEWCS), the NATO Infrastructure Program, and the NATO Maintenance and Supply Agency (NAMSA) among them--each of which has its own formal cost-sharing arrangements.

Table A-1 illustrates the current cost allocations for some of these programs. The U.S. share of the NATO civil budget is currently 23.25 percent, with the United Kingdom bearing the second largest share (18.82 percent) and France and Germany close behind with 16.5 percent and 15.54 percent respectively. The U.S. share of the NATO military budget for operation and maintenance is 25 percent for those operations for which France shares in the cost, and 30.16 percent for the others.

The NATO Infrastructure Program provides for improvements to facilities such as airfields, ports, communications, supply storage depots and distribution systems, air defense sites, training installations, and wartime headquarters. The host country in which the facility is located is responsible for providing land, access roads, and utility connections; the remainder of the project's cost is funded commonly by NATO.

The U.S. share of the commonly-funded portion of the cost of these facilities is currently close to 24.1 percent of those programs in which France elects to participate, and about 27.8 percent when France does not share in the cost. Germany's share of 23.2 percent (26.8 percent without France) is almost as large as that of the United States. Germany, however, is also where the largest number of Infrastructure Program projects have been undertaken, so that it has received a compensating flow of economic benefits from these activities. U.S. appropriations for the NATO Infrastruc-

1. France participates selectively in certain elements of the military program, but does not commit its military assets to formal NATO control.

TABLE A-1. NORTH ATLANTIC TREATY ORGANIZATION COST SHARING FORMULAS (In percent) a/

Nation	Civil Budget	Military Budget	Infrastructure Program		NAEWCS Operation
			With France	Without France	
Belgium	2.76	3.56	3.96	4.59	3.39
Canada	5.60	6.99	5.56	6.43	9.43
Denmark	1.59	2.10	3.26	3.77	2.00
France	16.50	n.a.	13.34	n.a.	n.a.
Germany	15.54	19.42	23.16	26.76	28.13
Greece	0.38	0.47	0.69	0.79	0.62
Iceland	0.05	0.06	n.a.	n.a.	n.a.
Italy	5.75	7.38	6.98	8.07	7.26
Luxembourg	0.08	0.11	0.19	0.22	0.11
Netherlands	2.75	3.55	4.49	5.19	3.75
Norway	1.11	1.45	2.75	3.18	1.46
Portugal	0.63	0.78	0.20	0.20	0.70
Spain	1.59	n.a.	n.a.	n.a.	n.a.
Turkey	3.50	1.99	0.81	0.81	1.62
United Kingdom	18.82	21.98	10.54	12.18	b/
United States	23.25	30.16	24.06	27.82	41.53
Total	100.00	100.00	100.00	100.00	100.00

SOURCE: Department of Defense, "NATO Infrastructure Program" (no date).

a. Actual percentages are stated to four decimal places. Details may not add to totals because of rounding.

b. The United Kingdom pays all NIMROD operation and support costs in lieu of contributing to the NAEWCS program.

n.a. = not available.

ture Program, which totaled $232 million in fiscal year 1987, normally appear in Title 5 of the Military Construction Appropriation Bill.

The NAEWCS program typifies the complex burdensharing arrangements within NATO and the difficult task of negotiation involved in reaching them. When the United Kingdom insisted on pursuing its own airborne warning and control system--the NIMROD program--a compromise was reached in which both the United States' E-3A AWACS aircraft and the NIMROD were included in the NAEWCS. Cost shares for acquiring the aircraft were set at 32.9 percent for the United States, 24 percent for Germany, 22.6 percent for the United Kingdom (to include its expenditures for NIMROD), and 20.5 percent for the remaining nations (not including France).

Costs for ground facilities to support the NAEWCS were allocated using the then prevailing Infrastructure Program percentages, while costs for operation and maintenance of the NAEWCS are apportioned based on the average of each participating nation's acquisition cost share and its NATO military budget cost share. The United Kingdom pays all O&M costs for the NIMROD but does not share in the O&M cost for the E-3A.